

EXEMPLAR #1: PROPOSAL TO FUND FOR TEACHERS/BOSTON

Approximately 16,750 characters

Personal Statement:

Before I became a teacher, I had the fortunate opportunity to sample a variety of cultures through travel. These experiences have shown me how invaluable traveling to other lands is to the growth of one's spirit and intellect. I would like to rejuvenate this experience in South-East Asia; however, I would like to do this with one added purpose that goes beyond myself--that places my identity as a teacher in the forefront of this experience. I would like to design my own trip and travel alone to a part of the world I have only read about. Journeying alone to a new country as a teacher would challenge my way of thinking, spark new possibilities in my curriculum, test my resourcefulness, build my confidence as an independent woman, and like my students, place me foremost in the context of "learner."

Project/Activity Description: What challenging, enriching project would you like to pursue this summer?

A journey to Vietnam would help me understand the complexities of this country and help me personalize a country's people and history that has included clichéd preconceptions and outdated images for too long.

I would like to travel to Vietnam through a National Geographic iExplore trip for three weeks this July to explore a country and culture that I have only read about. My objectives are: 1) to travel with my identity as a teacher-scholar in the forefront, 2) to expand and deepen my knowledge of Vietnam and Vietnamese culture through research and cultural immersion, 3) to confront and expand my own worldview. I will conduct research and gather primary source materials to bring back to my classroom and these materials will help me re-envision and re-create my curriculum unit entitled *American Literature of the Vietnam War*.

The research that I do will enable me to return to the United States with new ideas for my unit including literary selections from Vietnamese authors to accompany the American voices I already teach. In addition, I will develop resources for a web-based **Multi-Media Scrapbook** and **PowerPoint** presentation for my re-envisioned unit based on my deepened content knowledge and more personal understandings. Some of the questions that I will take on my journey include: *How do we teach painful and complex stories?, What does it mean to be Vietnamese?, and How are the diverse cultures of Vietnam expressed through art, literature and philosophy?*

I will visit the historical, religious, and cultural landmarks in cities, towns, and rural areas on my journey with the express purpose of immersing myself in the culture, history, people and ethos of Vietnam so that my curriculum more accurately and thoughtfully reflects Vietnam and its people. An outline of my journey follows:

Hanoi:

Objective:

I am interested in seeing how the city's imperial, colonial and communist pasts have blended together architecturally and in spirit. It will also be interesting to note the Vietnamese perspective when touring museums. A visit to these museums will bring me artifacts, videos, maps and art that span Vietnam's long and culturally diverse history. Some of the highlights of this visit include: Vietnam Museum of Ethnology, History Museum, Museum of Vietnamese Women, Hoa Lo Prison Museum, Lenin Park, Revolution Museum, Jade Mountain Temple, Ho Chi Minh Mausoleum and Museum, Perfume Pagoda, Tran Quoc Pagoda and Kim Dong Theater to see the Thang Water Puppet troupe.

Hue:

Objective: A visit to Vietnam's Imperial City will allow me to expand my knowledge of this country's vast history. I will begin at the Citadel and the Tombs of the Nguyen Dynasty. I will venture beyond the city's limits to the DMZ (Demilitarized Zone) as well The Truong Son National Cemetery where some 11,000 Vietnamese soldiers are buried.

Hoi An:

Objective: I will explore the diverse voices that are part of Vietnam's past and present in this city. I will visit Quan Thang House and Phung Hung House and partake in two historically significant excursions outside of this city to My Son and My Lai.

Ho Chi Minh City (Saigon):

Objective: I would like to experience for myself how communism has changed this city and how this city is negotiating the Western worldview with its own in the 21st century. I plan to tour the Art Museum, Botanic Gardens, Giac Lam Pagoda, Jade Emperors Pagoda, Reunification Palace, War Remnants Museum, Thich Quang Duc Memorial and the historic Cu Chi tunnels.

Mekong Delta:

Objective: I will travel to more rural areas in this region and stay with a local family. I want to see firsthand the landscape vividly described by many American soldiers in their texts set in Vietnam. This is why a home-stay here is most desirable. I would like to hear the stories from Vietnamese voices to complement the stories that I know.

Benefits to Teacher: How will it help you grow as a teacher? State your objectives.

Teaching requires humility. One must always confront one's lack of knowledge or understanding of a culture, philosophy, history or a work of literature. It is with this sense of humility along with an ever-present sense of curiosity and love of research that brings one to teaching. It is with these qualities that I request this grant.

My objectives are: 1) to travel with my identity as a teacher-scholar in the forefront 2) to expand and deepen my knowledge of Vietnam and Vietnamese culture through research and cultural immersion and 3) to confront and expand my own worldview.

What are the impulses for this project?

The story of the Vietnam War is a painful story for many but not widely shared. Those of a younger generation--my students--do not share the knowledge, history, or emotional response about Vietnam that older generations share. When I begin teaching the literature of this era, many of my students are unaware of the War and the country while other students, those who emigrated from Vietnam, are often voiceless.

I teach all 11th grade English courses at my school. One unit I teach is entitled *American Literature of the Vietnam War*. Students read selections from The Vietnam Reader edited by Stewart O'Nan as well as Tim O'Brien's The Things They Carried. When I teach these works, it is difficult for me to extricate myself from my preconceived notions of Vietnam. Powerful images overwhelm me as an American teacher: the My Lai massacre, the colonial exploitation, the government oppression, the land mine crisis, and the countless victims. I even associate the country's name, Vietnam, with the War, the victims, the guilt, and overwhelming sadness I feel as an American. The United States' relationship with Vietnam often seems so one-dimensional and scarred I sometimes wonder if I am simply reinforcing stereotyped and simplistic understandings of a rich, complex, and beautiful country and its people.

When I present these works to students, I present a stagnant and static history due to my own limited knowledge. The story I teach is one-dimensional as it begins and ends with the War and is told only through American voices. I have come to realize that I am not telling the whole story. I am not telling the Vietnamese story. O'Brien's story and others should be complemented with Vietnamese authors' voices. Along with Vietnamese literature, I must re-envision this unit to include the history (not only Vietnam's relationship with the US), the art, and philosophy of this country so that my students and I come away with an increased awareness of the depth and diversity of this culture and people. I need to bring the story of Vietnam out of the past and into the modern day. Most importantly, my unit must give voice to all.

What personal challenge would this experience address?

How do we teach painful and complex stories?

Teaching personally painful texts is always difficult for me as an educator. It is my theory that if I immerse myself in the history, culture and ethos of Vietnam, I will confront the limitations of my worldview head-on. Further, by facing the difficult, I will come away with a more in-depth appreciation and understanding of Vietnam and its people for me and for my students.

This grant would help me grow by enabling me to step out of my comfort zone. Stepping out of this space will allow me to renew my spirit as a teacher and as an independent woman.

Lately, I have come to realize that it is others--my students and my newer colleagues--who energize and inspire me: my students, for their lives beyond my classroom, and my newer colleagues, for their teaching lives that are just beginning. I sometimes wonder when did it become only about others' personal and professional journeys and not my own? When did these stories become theirs and not mine? I have participated in professional development workshops and earned an advanced degree. I have learned much and I still have so much to learn to be a better educator. Yet, these experiences have not brought me the energy of new beginnings. I now realize what I haven't done since I began teaching in the Boston nine years ago. I haven't stepped out of my comfort zone: the Boston Public Schools. I need to feel that energy that one can only feel when an experience is new. When one steps out of their comfort zone, one experiences a sense of disequilibrium: the anxiety, the excited anticipation, the unbalanced feeling that can bring an individual to new places and realizations because she is open and vulnerable. I want to be inspired by my own educational adventure that makes me challenge my thinking as a teacher and woman, test my own limits, and that makes me contemplate my life from new directions.

Benefits to Students: How will your students benefit from your proposed project?

I would like to honor my Vietnamese students' culture and challenge my non-Vietnamese students to expand their worldview.

In the classroom the story of Vietnam--its identity--is often relegated to its relationship solely with the United States and the War. While this relationship is part of our collective American consciousness, it is important that educators don't leave students of Vietnamese descent with only American perspectives, victimhood and tragedy. By including Vietnamese voices from literature, art, history and philosophy, I would give my Vietnamese students opportunities to leave my classroom uplifted and proud of their ancestry. Our work together would serve to connect their home and school lives. And, as important, my students who are not Vietnamese will leave my classroom with an increased awareness of the depth, complexity and richness of a country and its people.

What will you bring back to the classroom from your experience?

*I have never traveled to this region before and never embarked on any trip of this nature as a teacher. To travel with this identity in the forefront of this experience would be enormously beneficial. With this identity, I will travel with the purpose of creating a web-based **Multi-Media Scrapbook** for my students that will pique their curiosity about this country as well as build their background knowledge.*

I will create an educational website in the form of a **Multi-Media Scrapbook** based on my journey to Vietnam. This site will chronicle the journey of an educator deepening her content knowledge so that the curriculum thoughtfully and more accurately reflects the country and culture of Vietnam. The scrapbook will contain the internet sites I collect, with my new and more informed understanding of Vietnam, along with my personal photos and the other resources I collect on my journey. Each web page I create will serve to provide students with a full complement of background knowledge for their readings in my re-envisioned unit. Some of the scrapbook categories created by my expedition would include: *Why Vietnam: A Teacher's Learning Quest, A Day in the Life of Ms. (me) , Journal Entries, Postcards from Vietnam, Historical Landmarks, Natural Landscapes, Ancient Buildings, Architecture, Art and Artifacts, Maps, Interviews, and the People of Vietnam.* Other sections of this multi-media catalogue will include short video clips and music. I will use the observations that I make in my journal to formulate key questions that will provide the framework for this website. Further, these questions will lead students through their scrapbook journey and will ask students to integrate and apply the information that they have learned from this site with O'Brien's novel, short stories by American authors, as well as parallel works of Vietnamese literature.

Benefits to School: How will these activities tie into other professional development goals at your school?

I chose to teach at my school because its mission supports teacher-driven curriculum development. My school honors teacher knowledge and encourages teacher-driven scholarship; hence, our professional development is inquiry based. The inquiry process is as follows: 1) Teachers, inspired by their own classrooms and curriculum, create a research question/theory to explore. 2) Teachers share their research question with colleagues. With collaboration from colleagues, teachers refine their question, share current theory and research on the topic, and brainstorm possible methods of investigating their question. 3) Teachers design a project to test their

theory/answer their question. 4) Teachers share with the school community the result of their research project during our weekly meeting. My question for this project would be, *“How do we teach painful and complex stories to our students?”* If awarded this opportunity by FFT, I would begin my newest inquiry with my colleagues this Spring and share the results of my research with them during the beginning of the school year 2005-2006.

When you return from your summer project, what are your plans for sharing your experiences with the school as a whole?

Since our pilot school was first conceived, it was with the concept that it would be a teacher-driven school. While addressing state content area standards, teachers may author their own curriculum and are free from district mandates. With this autonomy comes the added responsibility of communicating to parents and community members about the curriculum their students are taught. Thus, I would design a **PowerPoint** presentation for both the Parent Council and the Governing Board. This presentation would make transparent the entire process that I went through as an educator confronting her own worldview in an effort to re-envision her curriculum to more accurately and efficaciously meet the needs of her students. This presentation will also include my final project: the web-based **Multi-Media Scrapbook** I will have developed for my students.

Documentation: How will you document or report on the impact of the experience?

I will document my trip by engaging in the following methods:

- write a journal that posits my identity as an American teacher in Vietnam struggling to free herself from her outdated and sometimes clichéd history
- chronicle my visits to communities through postcards addressed to my students
- collect photographic/video images that show Vietnam’s rich history before, during and after the War with the United States
- collect artifacts that represent various time periods in Vietnam’s culture and history
- go off the beaten path of the tourist (take local transportation, shop in local markets, investigate local schools and dine where locals dine) to engage in interviews
- participate in a home-stay with a local family and interview my host family about their views on a variety of topics including: life in Vietnam in the past and today, current events, the United States and recommended works of Vietnamese literature.

I will use the documents I collect (my own primary sources) to develop an internet-based **Multi-Media Scrapbook** and a **PowerPoint** presentation of my educational adventure. Both the **Multi-Media Scrapbook** and the **PowerPoint** presentation will document my experience as well as report on the impact of my journey for FFT.

Budget Narrative:

I would like to go for three weeks in July on one of National Geographic’s iExplore expeditions to Vietnam. I have researched the cost for this tour (\$2,050); this trip includes meals, entrance fees, lodging, local transportation, and professional guides. Additional costs are international airfare (approx. \$1,800); single entry visa to Vietnam (\$85); additional solo excursions: My Son, My Lai, Perfume Pagoda and Cu Chi tunnels (\$150); artifacts/souvenirs for my website and classroom (\$200); and a digital camera with movie mode (\$350) & 256 MB digital memory card (\$50) to document my learning experience. Without the generous support of the FFT, I would be unable to do this type of research for my classroom. **Total Cost: 4,685**

EXEMPLAR #2: PROPOSAL TO FUND FOR TEACHERS/BOSTON

Approximately 14, 600 characters

Project/ Activity Description:

I will use FFT funds to support my professional development through a two-part project. The first part involves observing hands-on, inquiry-based scientific exploration at the College of the Atlantic's Summer Field Studies for Children program and developing lesson plans with the program educators for our mutual use. While there, I will observe and participate in science lessons, attend professional development activities for the program's staff, and collaborate with program staff to develop first- and second-grade natural history and ecology lessons that they will use and that I will bring back to Boston to use at my school. The Summer Field Studies' one- and two-week field studies programs, led by qualified environmental educators, provide students with field-based explorations based on a prompt or question each day. They also incorporate developmentally-appropriate sensory awareness activities, games, stories, crafts, and gross motor skills activities that relate to the science themes and concepts of the session. My conversations with the coordinator of the program, as well as its reputation among science educators I know, have convinced me that this program does an excellent job teaching children through outdoor excursions. This is not simply an outdoor summer camp; rather, it is a program that provides rich instruction about the natural world through developmentally-appropriate learning activities that extend and expand children's experiences, language and vocabulary, scientific thinking skills, and content knowledge.

Next, I plan to take a two-week-long geology course with the College of the Atlantic's Summer Courses for K-12 Teachers in order to increase my own content knowledge of earth, life, and physical science, as well as to give me an experience as a student in the kind of inquiry-based science instruction I try to provide to my students. This course includes the creation of lesson plans and/or a unit based on investigation of local landforms for use in my own classroom. I have been in correspondence with the professor of the course, Dr. Doug Reusch, and have found a strong overlap between his philosophy of teaching science and my own. He designs his class to foster "a spirit of inquiry and abilities" in earth and physical science and to help teachers nurture this spirit in their own students. He has worked successfully with early childhood educators as well as teachers of older students in the past, and is excited about helping me design learning experiences for my students over the summer.

Benefits to teacher:

Our urban school is located in the midst of several unique sites which offer a rich environment for exploring natural history and ecology. When I first came to the school, I imagined myself walking through the Arnold Arboretum or the Forest Hills Cemetery with my students, hunting for wildflowers or trailing birds. Several weeks ago, I took a small group of students to visit a large compost pile on the grounds of the cemetery just down the road from school. After climbing up the warm pile of woodchips, digging for worms, and taking the temperature of the pile, we walked around and explored a bit. I watched a student who struggles with most of his academic work as he paid close attention to what he found and asked good questions. He was excited and engaged in his explorations. I was deeply aware of my desire to spend more time like this with my whole class, to use the cemetery and arboretum in the ways I had originally envisioned when I came to teach here. At the same time, I found myself wondering how I would structure such an exploration with my entire class. How would I be sure their searching was structured in some way? How would we use what we discovered? How would I engage them in discussions and push their thinking in new directions? I have more to learn in order to do this with first graders. In order to learn to take my children on such expeditions on a regular basis, I need two things. First, I need to observe as other educators lead students in such field-based natural history lessons. I know that I, like many other teachers, learn best by watching others teach. Second, I need to increase my content knowledge of natural history, ecology, and earth sciences so that I know more about where to direct my students' attention and how to design explorations for them.

To achieve these goals, I plan to spend two weeks as an observer and participant at the College of the Atlantic's Summer Field Studies for Children. By observing the environmental educators at work, I will build my repertoire of hands-on, outdoor instruction. I will be able to learn ways of integrating science, the arts, and literacy from the experienced teachers at the Summer Field Studies program, and to find ways to use their methods in my own

classroom. Most importantly, this experience will give me ideas about how to take the excitement generated by outdoor adventures and explorations and turn it into real, deep learning experiences.

While at the Summer Field Studies program, I will spend the majority of my time with the youngest group, those entering the first and second grades in the fall. I will also have the opportunity, however, to work with older students and their teachers in order to see a variety of teaching methods and content areas and how to adapt them for students of different ages. I will be able to spend two Friday afternoons of professional development with the program educators, participating in a common field experience to build content knowledge and helping to plan lessons for the coming week. The staff of the program has asked that I work with them to adapt their lessons for early elementary students, since the bulk of their experience is often with older students. The lessons we adapt and design together will be of use both to their program and to me in my own classroom.

The second half of my time at the College of the Atlantic will be spent as a student in “A Field-Based Introduction to Geology” course for K-12 teachers. This course is designed to “provide K-12 educators with a variety of experiences that will enhance their teaching of earth, life and/or physical science” (course syllabus, online). Although the content is focused on geology, it covers these three major branches of scientific inquiry so that I will build my own knowledge in these subjects. Not only will I spend a large part of the course designing activities for my own students based on topographical maps of the landforms around our school in Boston, but I will also be experiencing the kind of instruction I hope to provide to my students. Much of the course focuses on how to apply our learning to what we teach in our own classrooms.

Benefits to students:

At our whole-school professional development meeting on January 3rd of this year, our staff began the day by listing the areas in which we see our students engaged in rigorous curriculum and high achievement. When grade-level groups came together to share their lists, we observed a great deal of overlap in our observations. From kindergarten to eighth grade, we see our students strive for excellence when they are engaged in hands-on, community- or field-based studies that culminate in a public presentation or exhibition of their work. It became clear that we need to build our capacity to offer such learning experiences to our students because they learn more when engaged in real-world projects.

Like my colleagues, I observe higher levels of excitement and achievement when my first graders are involved in inquiry- and project-based learning. If I increase my “toolbox” of field-based earth, life, and physical science learning activities, I can offer such fulfilling instruction to my students more often. Most of the urban students at our school have not had the chance to explore fields and forests and to draw their own conclusions about what they observe there. Such experiences build students’ vocabulary, scientific reasoning, observation skills, and what we call “cultural capital,” all of which are essential for our students to achieve. We have seen students in our school build knowledge, understanding, and vocabulary through field-based experiences in the kindergarten’s partnership with the Forest Hills Educational Trust and in the second- and third-grade Young Naturalist program offered in the afternoons by two parents; I could build a bridge between these groups in the first-grade.

Our first-grade science curriculum includes a long unit on Growing Things (based on the *Insights* curriculum). We begin the unit in the fall when we study Farms, Markets, and the Distribution of Produce in social studies. As students visit an orchard and a farm, learning about produce production and distribution, they explore seeds in the classroom and watch their own plants grow. The curriculum includes a few outdoor explorations, but they are limited. This year we are trying to extend the curriculum to include more excursions to the cemetery and arboretum to study the organisms that grow there. We hope to return to the same curriculum in the spring so we can compare what lives and grows in the fall with what we see in the spring and so we can do more planting of our own. We have also considered adding an earth science piece to first grade science. My summer experiences at the College of the Atlantic will give me the tools and experiences I need to develop the first-grade science curriculum to increase the field experiences in the Growing Things unit as well as to add an earth science element based on my work in the geology class.

Benefits to school:

Our school is in the process of increasing our use of project- and field-based curriculum. We are in our second year of a partnership with Co-SEED (Community-Based School Environmental Education), a project of the

Antioch-New England Institute, which works with schools to “use the local environment to teach students concepts using all disciplines while emphasizing hands-on real world learning experiences . . . helping students develop stronger ties to their community, a greater appreciation for the natural world and a heightened commitment to serving as active, contributing citizens” (our school website). I am a member of the steering committee for this partnership and have been involved in designing such curriculum during both years of the partnership. From kindergarten to eighth grade, our faculty is engaged in building our knowledge of project-based, interdisciplinary curriculum in order to increase student achievement.

If I have the chance to build my skills in field-based science instruction this summer, I will be able to share this expertise with other staff at my school. As a science and math school, we particularly need to have teachers with an ability to build project- and field-based curriculum in those content areas and to integrate them with literacy. When I attend our monthly “big picture” curriculum planning meetings next year, as well as summer professional development and staff meetings devoted to curriculum development, I will be able to share methods, activities, and ideas with other staff. I will also be able to share my experiences at the monthly Co-SEED steering committee meetings I attend, where we work on creating place-based science activities for a number of grades. Our school does a lot of curriculum development collaboratively, both within grade-level teams and across grade-levels. I have benefited greatly from other teachers’ experiences and ideas about how to develop hands-on science in my classroom; this summer project will better allow me to provide such help to other teachers in turn.

At several grade levels, our school has been building partnerships with the nearby cemetery and arboretum so that we can collaborate with them to design learning experiences based in the natural environments they provide. Many teachers have not had the chance to explore these preserves near our school and haven’t thought about the extent to which they can use these spaces for science instruction. When we return to school next year, I will design and lead a common field experience for our school staff based on the geology class I take, modeling field-teaching techniques for other teachers. Through this experience, the staff will learn their way around the cemetery and/or arboretum, increase their content knowledge of local landforms, participate in the kind of hands-on scientific inquiry we want to offer to our students, and think about ways they could use these spaces in their own classrooms.

Documentation:

While at the School for Field Studies, I will create a packet of learning experiences I observe or help develop which will be available for other teachers’ use at school. I will also take notes of my observations of teaching methods, activities, and pedagogical strategies that I will incorporate into the packet. I will use this packet in conjunction with the professional development field experience I offer in the fall.

A requirement of the geology course is that I develop a student investigation of a field site near our school. This investigation, which will either compliment our Growing Things unit or be part of a new earth science unit, will be written as a series of lesson plans that I and the rest of the first-grade team can use. In addition, I will share the project with teachers of upper grades who teach about landforms, rocks, and minerals so that they can take ideas from it for use in their own curriculum. Finally, I will incorporate other pedagogical ideas from the geology course into the packet on field-based science instruction I design for the staff at my school.

Budget Narrative:

I am requesting \$2,982.00 for this project. The comprehensive cost of the two-week course at College of the Atlantic, including room and board, is \$1565.00 for out-of-state teachers. I have received approval to continue to stay in the college’s dorms and participate in their meal plan for the two weeks I am working with the Summer Field Studies, which costs an additional \$740. There is an additional lab fee of \$50 for the course, and the college recommends budgeting \$150 for books and materials. I have estimated the cost of driving from Boston to Bar Harbor in my own car and about 200 miles of local driving during the month I am there. Finally, I have asked for \$155 to purchase curriculum guides or other books about teaching science for my school’s professional library, and have budgeted \$20 for the printing of digital photographs of my experiences.

EXEMPLAR #3: PROPOSAL TO FUND FOR TEACHERS/BOSTON

Approximately 14,600 characters

Project Description

The understanding of waves and their properties is an integral part of the physics curriculum. Yet, its study is often theoretical and difficult for ninth grade students. I want to instill life into the subject through studying physics from a real world perspective. I hope to achieve this by visiting Bangkok, Thailand and the southern city of Phuket, an area devastated by the recent tsunami. My primary objectives will be to gain an understanding of the forces associated with tsunamis by teaming with experts at Chulalongkorn University in Bangkok and traveling to Phuket where I will be studying and documenting the effects of the tsunami on the fragile, shallow water reef ecosystems. Here I will also work in establishing a sister school. Additional resources will be provided by researchers at the International Tsunami Information Center in Honolulu, Hawaii who have agreed to work with me in gathering information and seismographic records of the earthquake from which the tsunami originated.

The study of forces, motion and waves is a required component of the Physics curriculum and the Massachusetts Science Frameworks. Physics is often very theoretical and the concepts are difficult for students to grasp and to connect with. It is my hope to teach it in the future using a topically based pedagogy where many separate topics will be covered through exploration of a single unit, tsunamis. Students will be involved with hands-on, inquiry-based learning in a unit that they will find stimulating. Utilizing current research and various forms of technology, students will be able to apply the principles of physics to real life scenarios.

During the first part of my visit I will be teaming with Chulalongkorn University in Bangkok. Here I can learn about a natural phenomenon from individuals who understand the awe-inspiring force and devastating nature of tsunamis. Over the course of several days I will work with experts in the fields of physics, marine biology and geology to gain an in-depth understanding of the physics of a tsunami and gather some general background information. I will use this knowledge to develop the unit and to create an interactive website for my class and for other teachers. This partnering will also prepare me for my visit to Phuket where I will study coral reef damage.

The second part of my visit will take place in the southern city of Phuket. I can not possibly begin to comprehend the suffering and emotional trauma experienced by those immediately impacted by the tsunami. A month after the waves hit, the secondary effects of the tsunami are now being felt: food shortages, disease and a lack of shelter, medical care and clean water. It will be years before the cleanup is complete and rebuilding begins. As such, this may be a solemn experience. The tsunami took its toll as well on the coral reefs. It is believed that 30-50% of the shallow coral reefs along Thailand's Andaman Sea coast have been possibly destroyed. These reefs, which are home to thousands of species, are also an important component of the Thai economy bringing in millions of tourists. The reefs have already been severely stressed by the effects of blast fishing, sewage and other pollutants. The tsunami may have compounded the damage to the reefs as large amounts of sediment, rock, debris and man-made items were washed out and caught in the shallow coral. In some regions the force of the tsunami alone may have destroyed reefs. I will survey the underwater reefs firsthand through scuba or snorkeling and speak to local experts involved in the cleanup process about the future of the reefs.

I will digitally record the damage sustained by the reefs and surrounding ecosystems as I do my research in Phuket. Students will be able to see, just as I was, the true power of a tsunami. As I edit down this digital footage I hope to include video clips on the website for all students to see. Many of the major coral reefs worldwide are sick or threatened. With the loss of the reefs goes the loss of many species. I want students to not only understand reef significance as a crucial marine habitat, but the environmental and economic importance as well.

Benefits to Teacher

One of most important aspects of teaching is to continually build upon the existing knowledge in our content area. My work with university professors and researchers in the fields of physics, geology and marine biology will greatly serve to broaden the depth of my understanding on tsunamis, coral reef ecosystems and various aspects of physics. I am thrilled at the prospect of being able to meet and learn from these individuals. Knowing little about tsunamis and coral reefs before beginning this research, I believe this increased knowledge will make me a better teacher.

Having never traveled to Asia, I look forward at learning about Thai culture. It will enable me to better understand and relate with the Asian students in my classes. I look forward to the challenges of immersing myself in a culture which is foreign to me. My goal will be to learn about the Thai education system by visiting local schools. During my research I will maintain a level of respect, compassion and understanding, especially in Phuket where the tsunami hit. Although Thais are stoic on the outside due to their deeply rooted faith in the Buddhist religion, I understand that emotions run deep. I believe that learning about the culture will definitely help me in my teaching. The majority of the students in our school are first and second generation immigrants. With all different backgrounds come all different cultural norms. Understanding where our students come from helps us to better identify and serve the needs of each student individually.

As an undergraduate I spent two months on a secluded island in Lake Michigan studying nesting habits in a small population of painted turtles. I am energized by the prospect of being able to return to the field to conduct research on tsunamis and coral reefs. I believe people of science are unique for their love of collecting and analyzing data on things most others would never give a second thought to. The opportunity to conduct research which I can tie in with my passion for teaching delights me. This is the chance of a lifetime for me and one I would never be able to undertake on my own.

Student Benefits

In 2000, the National Science Foundation reported that the percentage of working doctoral level physicists was 84% white and 93% male. In my school, minority students comprise 95% of the student population. I firmly believe a more concerted effort needs to be made in urban schools to promote an interest in science careers with underrepresented minorities. This push begins by making science fun and connecting them to their learning. Learning needs to be something students want to do, not something they are forced to do. Through the creation of engaging, hands-on, topical units, students will want to learn and hopefully may consider pursuing careers in the sciences.

Upon return I plan to concentrate much of my effort on developing a unit that has real-life applications and extensions. The unit will focus on the physics of tsunamis. A core outline of the unit would consist of: students learning the basic anatomy of a wave, a comprehension of the forces and waves associated with underwater earthquakes, the subduction of plates and subsequent formation of a tsunami, wave motion of tsunamis vs. wave motion of typical water waves, an exploration of wave speed with a comparison to light and sound waves, the forces and impact associated with landfall, the effect of water depth on amplitude, a focus on the relevance of wavelength and period and finally commencing with an exploration at the impact on coral reef ecosystems. Impact will be gauged using physics calculations not death toll. The unit will be supplemented throughout by group hands-on activities, the interactive website and an independent research component.

The physics of tsunamis website will be designed to promote knowledge of physics, waves and forces. Students will be able to supplement their learning through an interactive format which will involve clicking on a number of concepts such as wave speed, frequency, amplitude, energy, wave refraction, pressure, wavelength, mediums, wave type, compressions, rarefactions, s & p-waves, etc. The website will also have a teacher section with print-and-go activities as well as numerous extensions. The last component of the website which I'm particularly excited about will be a wave simulator where students are able to create a wave in which they determine and manipulate the variables (amplitude, period, wavelength, and earthquake magnitude) to visually relate how the changes they make effect the final outcome.

Hands-on approaches to learning will supplement our exploration in class. The first one will involve students looking at actual copies of the seismographic record of the underwater earthquake which gave rise to the tsunami. Students will undergo an analytic comparison of the recording with the actual wave itself. They will perform calculations on wave parameters with additional help being provided from their math teacher. Further comparisons will be drawn through examining other recorded seismographic recordings. All seismographic data will be provided by the International Tsunami Information Center. Additional activities will include students making wave pools in class and use of "slinkies" to visualize wave differences.

As a culminating piece students will immerse themselves in an independent investigation of historical tsunamis with a heavy emphasis on the physics. They will receive help from their ELA teacher on the writing and peer review components. The purpose of this piece is for students to make individual calculations and predications on tsunamis based on their research and to further make real the power of a tsunami. I would like them to learn the

frequency at which tsunamis occur by region as well. A large percentage of my students come from Dominican, Puerto Rican, Jamaican and West Indian descent. Many will be surprised to learn that in the past 400 years over 50 tsunamis have occurred in the Caribbean which breaks down to an average of a tsunami every 8 years. It is important that students be connected to the content as much as possible, that it be real to them. By tying in their cultural backgrounds with history and physics, I hope to engage them in the learning process.

Benefits to the School

The commitment to an open learning environment needs to be continually fostered in schools. Use of the CCL model and an open-door policy amongst colleagues greatly benefits the students we serve. During the past year, a colleague and I have been working on developing workshops designed to support the twenty plus science teachers in our department. The focus is on implementing technology into the curriculum. Teachers are guided in using LCD projectors, interactive websites and other tools which will supplement their teaching. Each teacher is encouraged to model a lesson they are able to create using this technology. I want to continue to build upon this idea in the next year. The opportunity to create a website, have it serve as an integral component of learning and be able to share it with the staff at my school is exciting.

I will design a workshop to show science teachers how they can use the exploration of tsunamis in their classrooms. Although, my focus was primarily on physics, there is a great deal of information on Biology and Environmental Science and even Chemistry. By exploring topics like coral reefs, beach erosion, impact on ecosystems and effect of runoff on marine species, teachers can focus in on one aspect of a current event and tie it in with their lessons. When the website is complete I will present it to the science department. Using an LCD projector and laptop, I will take teachers through the website, answer questions and assist them in implementing it into their classrooms if they so choose. I also plan to model a lesson, record feedback, and invite teachers to sit in on one of my classes to see how student are using the website in the learning process.

As the final and potentially most exciting part of this experience I will spend time visiting local schools in the Phuket region. I plan to speak with the teachers, staff and students about the idea of establishing a sister school. If interest can be generated, we would welcome their teachers to visit our school and members of our staff could visit Phuket. Students will be able to correspond as pen pals with each other. I believe this will be a unique experience for students as it will help connect them to their learning. Additionally, I hope to collect and send any materials/supplies I can to schools in need of them, especially those most impacted by the tsunami. This effort will be coordinated by students. If arrangements can be made in Phuket, I will present this to our staff during the opening day meeting in September.

Documentation

Documentation will take place throughout all stages of this project. The experience itself will be documented using a hand-held tape recorder, a digital video camera, an underwater camera and extensive note taking. The impact on student performance will be informally assessed through their engagement in the hands-on group activities, website exploration and lessons. Formally students will be assessed through their independent research, performance on exams and through an evaluative component on the website. I will take notes for the duration of the unit and include them along with observations in a detailed performance report at the end of the unit. More information can be provided on the specifics of this section if needed.

Budget (all estimates were determined using various websites and are accurate as of today)

Roundtrip Flight to Bangkok from Boston - \$1790

Roundtrip flight from Bangkok to Phuket – \$160

Home stay in Bangkok – 10 days = \$ 0 dollars

Hotel in Phuket (\$59/night) for 7 days -\$413

Transportation to and from airports - \$75

Transportation to university, sites and schools in Bangkok - \$80

Rental Car in Phuket for 7 days = \$245

Reef exploration (boat, fees, gear, underwater and tour) - \$305

Food Allowance = \$20/day - \$340

Digital Camcorder - \$479

Purchase of webpage domain (3 years) - \$300

Professional webpage creation - \$475

Thailand maps and conversation books - \$20

Notebooks, supplies for recording/gathering data – \$15

Materials for in-class experiments for 100 students (slinkies, trays) - \$100

Total = \$4797

EXEMPLAR #4: PROPOSAL TO FUND FOR TEACHERS/BOSTON

Approximately 14,400 characters

Costa Rica Language & Science

Project/Activity Description

Background: Our team is composed of two middle school science teachers, one teaching 7th grade, and the other teaching 8th grade. Approximately 40% of our student population is Latino, with many of them coming from families where Spanish is the primary language.

Proposed Project: We propose to address two separate, yet very important, professional development goals: to develop our Spanish communication skills and to enhance our understandings of science topics directly related to the curricula we teach. We propose to address these two goals by taking part in a Spanish language immersion program located in Costa Rica, a country known for its diverse ecological habitats, fantastic biodiversity, and enlightened conservation efforts.

As a team, we will travel to Costa Rica for a period of three to four weeks this summer to participate in Spanish language immersion classes offered through Centro Panamericano de Idiomas (CPI), based in San Joaquín de Flores, Costa Rica. We have chosen this school because of its solid reputation and ability to meet our needs as teachers. CPI was founded in 1991, and offers a series of intensive Spanish language classes with small class sizes (2-4 students). Professors tailor the programs to the academic goals of their students, which will allow us to focus on two particular areas of language development: vocabulary to address school-specific issues with Spanish-speaking parents and science-related terminology connected to our classroom curricula. Another reason we selected this program is that it offers a truly immersive Spanish learning environment. The school is located away from touristy areas, and we will each be living with a local family, thereby enhancing the Spanish language learning experience as well as exposure to the Caribbean culture.

The Spanish language classes are scheduled during the morning and early afternoon hours, Monday through Friday. This schedule will allow us to realize our second goal, which is to develop direct connections to our science curriculum. During our “free” afternoons and weekends, we will be able to explore different parts of the country and develop curricular links. The science curriculum in Boston addresses biological/ecological and geological studies (*Diversity of Life* and *Earth History* in 7th grade and *Populations & Ecosystems* in 8th grade), and Costa Rica provides an excellent opportunity for curriculum-related case studies that we can take back to our classrooms. Costa Rica is an excellent location for this work for a number of reasons:

- Multiple habitats and ecosystems – A series of volcanic mountain chains runs from the Nicaraguan border to the Panamanian border, splitting the country in two. In the center of these ranges is a high-altitude plain, which is composed of fertile, volcanic soils. On either side of the plains are the coastal lowlands. The Caribbean coast is characterized by mangroves, wetlands, and sandy beaches, while the Pacific coast is much more rocky and riddled with numerous gulfs and peninsulas.
- Biodiversity – Costa Rica is famous for its fantastic array of species that inhabit a relatively small area of land. The tropical forests, mountain regions, volcanoes and coastal habitats contain over 1500 tree species, 850 bird species, sloths, monkeys, jungle cats, crocodiles, sea turtles, poison dart frogs, butterflies, and more.
- Strong conservation efforts – Costa Rica has a long-standing commitment to environmental conservation, with approximately 13% of the country dedicated to national parks, and over 25% protected in the form of biological or environmental reserves.

In addition, the CPI school has a number of excursions that are included with the cost of the Spanish immersion program. Some of the ones that would apply to our stated goals include:

- Monteverde Cloud Forest Reserve – This Reserve is known as one of the most outstanding wildlife sanctuaries in the New World tropics. Positioned atop the Continental Divide, the Reserve extends down both the Caribbean and Pacific slopes and includes eight different ecological life zones.
- Canopy Tour – We will study many of the different indigenous plants and animals that inhabit the forest canopy by taking a guided tour that will allow us to travel among a series of tree platforms.
- Monteverde Orchid Investigation Project – We will take part in a tour through a network of short paths exhibiting over 400 species of orchids, all native to the region.
- Arenal Volcano – We will explore this active volcano, which is located in the northern part of Costa Rica. In addition to witnessing actual lava flows, we will be able to explore the Tabacon Hot Springs, natural water pools and falls heated by the volcano, and document wildlife such as white faced monkeys, toucans, and other birds along the way.

Throughout our visit to Costa Rica, we both plan to keep a daily journal or log of our experiences as Spanish students and as scientists. In addition, we will document our project with digital photographs and video. These will allow us to create a web-based documentation of our visit for later use in the school as students use our data to enhance their own classroom investigations and projects.

We believe that this summer experience will allow us to dramatically develop our abilities as teachers, not only by enhancing our science curricula, but also by bridging the gap that exists between us and the families of students from Spanish speaking homes.

Benefits to teacher

As stated earlier, approximately 40% of our student population is Latino, and many of our students come from families where Spanish is the primary language. There have been numerous occasions when this has served as a barrier to effective communication between us and the parents of our students. A number of our Latino students have parents who are limited in their ability to communicate in English. This has been a source of frustration for both of us as teachers, as it requires that during school conferences or phone calls home, we often scramble to find an adult who can serve as a translator or resort to having a sibling or even the student themselves fulfill that responsibility. Being able to converse in Spanish will allow us to connect more closely with our students' families and develop positive working relationships. We believe that our proposed project will allow us to begin accomplishing this vision. We certainly recognize that we will not return to Boston fluent in Spanish. However, we believe that this experience will provide us with a solid foundation upon which we can continue to build upon as we put our new language skills into practice.

Another reason we are passionate about this project is that it holds such great potential to allow us to enhance our professional development as science teachers. Both of us currently serve as Teacher Leaders with the BPS Science Department through a grant with the National Science Foundation. While this professional development is extensive, it cannot provide the first-hand experiences and insight that we will gain by traveling to Costa Rica and exploring the fantastic diversity of species and ecosystems, as well as the active volcanic geology of the region. Finally, as colleagues working in the same school, we often collaborate on school-wide projects such as science fair and professional development planning. Our proposed project will allow us to expand our collaborative efforts even further.

Benefits to students

As previously mentioned, many of our students come from families in which Spanish is the primary language. This presents a tremendous barrier to effective communication between school and home. We hope that as we develop our Spanish language abilities, we will be able to lower that barrier, and increase our communications with our students' parents and families. Such communications will allow us to work

with our students' families to develop a stronger support system for student learning, and offer greater opportunities to bring our students' families into the educational process.

This experience will also benefit our students in another way: by allowing us, as teachers, to walk the proverbial mile in their shoes. A number of our Latino students are Second Language Learners, and have struggled with learning English and becoming accustomed to a new culture. Our summer experience will allow us to experience what this is like first-hand, as we will be fully immersed in a Spanish speaking culture. While our experience may only be temporary, we still believe it will allow us to have a greater understanding of the challenges and frustrations that some of our students experience.

Lastly, we will be able to offer our students our direct experiences and data with the biological and earth science connections we find in Costa Rica. As lifelong students of science, we know the immense value of making science content come alive for the students, and we believe that we will be able to do so by sharing our summer explorations in our classrooms. We will compile our biodiversity observations in a website that our students will use to complete class projects. For example, in 8th grade, Investigation 7 of *Populations & Ecosystems* is a case study project in which students select a specific ecosystem and then analyze the biotic and abiotic factors affecting its organization and the interaction of its food web. We will post a sample project on the website based on a Costa Rican ecosystem, complete with photographs, videos and first-hand accounts. This example will allow students to extend their classroom experience by recognizing that the work they are doing in class is similar to what a field researcher might do on-site. This is just one example of a curricular tie-in, but the site will be geared to provide many opportunities for 7th and 8th grade science students to access our documentation.

Benefits to school

This project will allow us to further the efforts of our school to enhance communication with and involvement of our students' families. As stated above, we will be better able to directly interact with those parents who are primarily Spanish speaking, and will increase parental involvement in school activities and programs.

We will share our experiences with our colleagues by developing a multimedia presentation that we can present during an all-staff meeting. In addition, as science Teacher Leaders we are already responsible for planning a certain amount of professional development time within the school's science department. We will use this opportunity to share our materials, including the website, with the other 7th and 8th grade science teachers, thereby expanding the impact of our project. In addition, by working together during the summer, we will be strengthening each of our understandings of the curricula taught at another grade level, allowing the 7th grade teacher to identify content which sets the groundwork for 8th grade, and allowing the 8th grade teacher to identify concepts which refer back to prior knowledge from the 7th grade curriculum. We will be sure to use professional development time within the school to share these findings within the science department.

Documentation

One of our stated goals for this project is to improve communication with the Spanish-speaking parents from our school. We will maintain a log of any and all communications with these parents and describe how we believe our summer project provided us with a stronger ability to serve our students and their families.

The website that we create will in itself be a form of documentation, as it provides access to our video and photograph archives and first-hand accounts in an organized manner. In addition, we will prepare a follow-up report about ways in which we were able to incorporate the science portion of our Costa Rica trip into our respective curricula, including the effectiveness of the website as a research tool for our students and a detailed listing of connections to the Massachusetts Science Framework.

Budget Narrative

The comprehensive language program offered by CPI offer the best value compared to other programs we researched (e.g., NuevaLengua, Don Quixote, Costa Rican Language Academy). The tuition for this comprehensive program is highly competitive (\$1660.00/person for four weeks). Most of our lodging, food and local transportation costs are included with the price of the program, with the exception of arrival and departure lodging and airport transportation (approx. \$45 per person each way). Additional local excursions are available at a fee of approx. \$40/week. Not included in the tuition costs are one meal per day Monday-Friday (\$10/day), and meals on weekends (\$40/day).

This project will require the purchase of two roundtrip airline tickets from Boston to San Jose, Costa Rica. At the time of this writing, the cost for each ticket for the summer period ranges between \$371 and \$426 per person (quotes obtained by Travelocity.com and Orbitz.com). We have increased this amount to \$475 in our budget to account for possible variation in airfare between now and the time we are notified of the status of our grant proposal.

We are also requesting funds to purchase a MiniDV camcorder to document our experiences with digital video. Based on research from cNet.com (a consumer research website), we determined that the Sony HandyCam DCR-PC350 is the best choice for our documentation objectives. This camera has 3.0 megapixel resolution, which will be essential when filming small organisms and details such as leaf patterns and soil variation. This camcorder has a number of advanced features that will be useful in the field. Night imaging will allow us to film nocturnal species and behavior, and Steadyshot will minimize shakes and vibrations to the images during outdoor explorations. This camera runs in the price range of \$1199.99 - \$1449.99 (bestbuy.com, circuitcity.com, mysimon.com). We will also need Mini DV Cassettes, at a price of approx. \$40 for 6 cassettes (bestbuy.com, circuitcity.com, mysimon.com).

Finally, we have included approximately \$200 for additional materials, such as books and items we can use in our classrooms, and \$400 for transportation and lodging for weekend explorations of various habitats in other parts of the country.